

## P/ NT COOPERATION TREAT

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
 CP2/5C24  
 Arlington, VA 22202  
 ETATS-UNIS D'AMERIQUE  
 in its capacity as elected Office

<b>Date of mailing</b> (day/month/year) 13 March 2001 (13.03.01)	
<b>International application No.</b> PCT/NO00/00208	<b>Applicant's or agent's file reference</b>
<b>International filing date</b> (day/month/year) 15 June 2000 (15.06.00)	<b>Priority date</b> (day/month/year) 15 June 1999 (15.06.99)
<b>Applicant</b> KRINGLEBOTN, Jon, Thomas	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
 12 January 2001 (12.01.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer F. Baechler Telephone No.: (41-22) 338.83.38
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## PACT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

CURO AS  
Box 38  
N-7231 Lundamo  
NORVÈGE

Date of mailing (day/month/year) 13 March 2001 (13.03.01)	To:
Applicant's or agent's file reference	
International application No. PCT/NO00/00208	IMPORTANT NOTIFICATION
International filing date (day/month/year) 15 June 2000 (15.06.00)	

## 1. The following indications appeared on record concerning:

☒ the applicant    ☒ the inventor    ☐ the agent    ☐ the common representative

## Name and Address

KRINGLEBOTN, Jon, Thomas  
Fagerliveien 17  
N-7020 Trondheim  
Norway

## State of Nationality

NO

## State of Residence

NO

Telephone No.

Facsimile No.

Teleprinter No.

## 2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person    ☐ the name    ☒ the address    ☐ the nationality    ☐ the residence

## Name and Address

KRINGLEBOTN, Jon, Thomas  
Jakob B. Bulls veg 8  
N-7024 Trondheim  
Norway

## State of Nationality

NO

## State of Residence

NO

Telephone No.

Facsimile No.

Teleprinter No.

## 3. Further observations, if necessary:

## 4. A copy of this notification has been sent to:

<input checked="" type="checkbox"/> the receiving Office	<input type="checkbox"/> the designated Offices concerned
<input type="checkbox"/> the International Searching Authority	<input checked="" type="checkbox"/> the elected Offices concerned
<input checked="" type="checkbox"/> the International Preliminary Examining Authority	<input type="checkbox"/> other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer  F. Baechler
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

# INTERNATIONAL COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 18 OCT 2001

PCT

Applicant's or agent's file reference ---	<b>FOR FURTHER ACTION</b>		See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/NO00/00208	International filing date (day/month/year) 15-06-2000	Priority date (day/month/year) 15-06-1999	
International Patent Classification (IPC) or national classification and IPC <sub>7</sub> G02F 1/01, G01D 5/353, G01J 3/42			
Applicant OPTOPLAN AS et al			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  12-01-2001	Date of completion of this report  25-09-2001
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. 08-667 72 88	Authorized officer  Sture Elnäs /itw Telephone No. 08-782 25 00

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/NO00/00208

## I. Basis of the report

1. With regard to the **elements** of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
pages 1-7 , as originally filed  
pages \_\_\_\_\_ , filed with the demand  
pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_
- ☒ the claims:  
pages \_\_\_\_\_ , as originally filed  
pages \_\_\_\_\_ , as amended (together with any statement) under article 19  
pages 10 , filed with the demand  
pages 8-9 , filed with the letter of 21-09-2001
- ☒ the drawings:  
pages 3 , as originally filed  
pages \_\_\_\_\_ , filed with the demand  
pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_ , as originally filed  
pages \_\_\_\_\_ , filed with the demand  
pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheet/fig \_\_\_\_\_

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/NO00/00208

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	<u>1-10</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-10</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-10</u>	YES
	Claims		NO

**2. Citations and explanations (Rule 70.7)**

The most relevant documents cited in the International Search Report are:

D1: WO 9836252

D2: IEEE Photonics Technology Letters, Volume 1, No 2, February 1989, Bulmer, C.H. et al, "Interrogation of an integrated optic modulator over a low-birefringence fiber using polarization tracking"

D3: US 5005952

The cited document D1, by the applicant, describes a device for measurement of optical wavelengths of FBG.

The subject matter claimed differs from the apparatus described in D1 in respect of introducing a polarization controller with feedback from the signal-processing unit.

D2 describes a technique for polarization control. Laser light is coupled into a polarization controller where any state of polarization can be achieved. The polarization is controlled by feedback from a device in connection with the detector.

The invention defined in claims 1-10 is not disclosed by any of these documents.

None of the cited documents gives any indication towards the claimed method for measurements of ortogonally polarized Bragg wavelengths. No relevant combination of the cited documents would lead a person skilled in the art to the invention defined in the claims.

Therefore, the invention defined in claims 1-10 is novel and is considered to involve an inventive step. It is also considered to be industrially applicable.

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

International application No.

PCT/NO00/00208

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

The numbering in figure 3 does not comply with the references in the claims.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/NO 00/00208

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: G02F 1/01, G01D 5/353, G01J 3/42

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: G01J, G01D, G02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 9836252 A1 (OPTOPLAN AS), 20 August 1998 (20.08.98), figure 1	1-10
Y ?	IEEE Photonics Technology Letters, Volume 1, No 2, February 1989, Bulmer, C.H. et al, "Interrogation of an integrated optic modulator over a low-bireffingence fiber using polarization tracking", page 35 - page 37, conclusions	10
Y	US 5005952 A (MICHAEL G. CLARK ET AL), 9 April 1991 (09.04.91), abstract	

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

\* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

2 November 2000

Date of mailing of the international search report

09 - 11 - 2000

Name and mailing address of the ISA/  
Swedish Patent Office  
Box 5055, S-102 42 STOCKHOLM  
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Authorized officer

Sture Elnäs/MN  
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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/NO 00/00208

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5844927 A (JON THOMAS KRINGLEBOTN), 1 December 1998 (01.12.98), column 3, line 60 - column 4, line 4  --	1-10
A	IEEE PHOTONICS TECHNOLOGY LETTERS, Volume 4, No 8, August 1992, Douay, M et al, "Birefringence effect of optical fiber laser with intracore fiber Bragg grating" page 845  --	1-10
A	°Proceeding of the SPIE-The International Society ..., Volume 3483, 1998, Ferreira L.A. et al, "Simultaneous strain and temperature sensing using an interferometrically interrogated fibre Bragg grating written in bow-tie fibre", page 49 - page 53, see whole document  -- -----	1-10



INTERNATIONAL SEARCH REPORT  
Information on patent family members

03/10/00

International application No.  
PCT/NO 00/00208

WO	9836252	A1	20/08/98	AU	723404	B	24/08/00
				AU	6230798	A	08/09/98
				EP	0960321	A	01/12/99
				NO	307357	B	20/03/00
				NO	970674	A	17/08/98
				US	6097487	A	01/08/00
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US	5005952	A	09/04/91	DE	3881780	A,T	22/07/93
				EP	0302091	A,B	08/02/89
				SE	0302091	T3	
				GB	2202643	A,B	28/09/88
				GB	8703795	D	00/00/00
				GB	8803783	D	00/00/00
				JP	1502462	T	24/08/89
				WO	8806303	A	25/08/88
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US	5844927	A	01/12/98	GB	2299203	A,B	25/09/96
				GB	9605822	D	00/00/00
				NO	302441	B	02/03/98
				NO	951052	A	23/09/96
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